

Short Report: What Is AIDS in the Amazon and the Guianas? Establishing the Burden of Disseminated Histoplasmosis

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Abstract. The pathogen ecology of Amazonian regions may lead to specific differences in the most frequent clinical presentations of acquired immunodeficiency syndrome (AIDS). A retrospective cohort study was thus conducted to describe the main AIDS-defining events in French Guiana. Disseminated histoplasmosis was the most frequent opportunistic infection (15.4/1000 person years).

The AIDS-defining illnesses are numerous. The prevalence of different opportunistic pathogens may vary between regions. There is an increase of pathogens as one moves toward the equator.¹ The positive predictive value of a symptom or a diagnostic test increases with the prevalence of the considered diagnosis.² On the contrary, the negative predictive value decreases when prevalence of the considered diagnosis increases. Knowledge of the local epidemiology is therefore important for clinicians making diagnostic and therapeutic decisions. In this perspective, we aimed to describe the major AIDS-defining illnesses in the context of French Guiana, a French territory of South America.

The standards of healthcare in French Guiana are close to those of metropolitan France. All human immunodeficiency virus (HIV) patients receive free antiretroviral treatments (including the most recent drugs) regardless of their origin or socio-economic level. Radiology, viral loads, CD4 counts and genotyping, and antiretroviral concentration measurements are available for routine care. There is a reference university laboratory specialized in parasitology-mycology since 1997 in Cayenne Hospital, with a mycologist performing fungal culture and a Pasteur institute for the diagnosis of tuberculosis (Pasteur Institute of Guadeloupe and Pasteur Institute of French Guiana). The diagnosis of histoplasmosis relied on the identification of histoplasma on direct examination of samples, culture, or histopathology. The manifestations of histoplasmosis are described elsewhere.³

The HIV-positive patients followed in Cayenne, Kourou, and Saint Laurent du Maroni hospitals between January 1, 1992 and October 31, 2008 were enrolled in the French Hospital Database for HIV (FHDH) and right censoring occurred after the last visit. The database includes > 80% of the patients followed in French Guiana. Trained technicians entered demographic data, weight, diagnoses, therapeutic data, medical events, viral loads, CD4 and CD8 counts. Diagnoses are coded according to the 10th International Classification of Diseases.⁴ Incidence rates were obtained. Patients included in the FHDH give informed consent to the

use of their data. Their identity is encrypted before the data is sent to the Ministry of Health and the Institut National de la Recherche Médicale (INSERM), which centralize data from Regional Coordination for the fight against HIV (COREVIH) throughout France. This data collection is approved by the Commission Nationale Informatique et Libertés (CNIL). The data were analyzed with STATA version 9.0 (College Station, TX).

A total of 2,320 subjects were included for a total of 40,404 records. There were 9,606 patient-years of follow-up. Before the HAART era 553 patients were followed for a total of 773 years at risk and after HAART became available, 2,048 were followed for a total of 8,829 years at risk. Figure 1 shows the most common AIDS-defining illnesses by period. Results show that, in the HAART era, disseminated histoplasmosis is the most frequent opportunist infection, followed by esophageal candidiasis, cerebral toxoplasmosis, and tuberculosis.

Here, we give an overview of what AIDS is in French Guiana, where diagnostic means are that of a rich country. This description may be of use for surrounding countries in the Guianas and in the Amazon region that would be expected to share the same pathogen ecology.⁵ Contrary to most opportunistic infections, histoplasmosis incidence did not decrease with the availability of HAART. This is because of the arrival of a parasitology and mycology team in Cayenne Hospital in 1997. Presumably, before this upgrade of mycological facilities, a number of cases were not diagnosed before 1997, and classified as HIV wasting syndrome. When the clinical symptoms involve respiratory symptoms, histoplasmosis, tuberculosis, and pneumocystosis are the usual suspects. Similarly, when encountering adenopathies, histoplasmosis and tuberculosis are also alternative diagnoses. The diagnosis procedures required to differentiate tuberculosis and histoplasmosis are often invasive.³ The risk is that diagnostic hesitation and delays in diagnostic procedures, notably in the case of histoplasmosis, may rapidly lead to death. Thus, it is important to improve the description of the presentation of these pathologies and to develop better diagnostic tools to aid the therapeutic decisions of the clinicians.⁶ In the meantime, a better knowledge of what causes AIDS in the region is precious because we strongly suspect histoplasmosis is a major but unrecognized cause of numerous deaths in and around the Amazon.

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Pre-HAART and HAART era incidence rates of AIDS defining illnesses in French Guiana :
2320 patients followed between 1992 and 2008

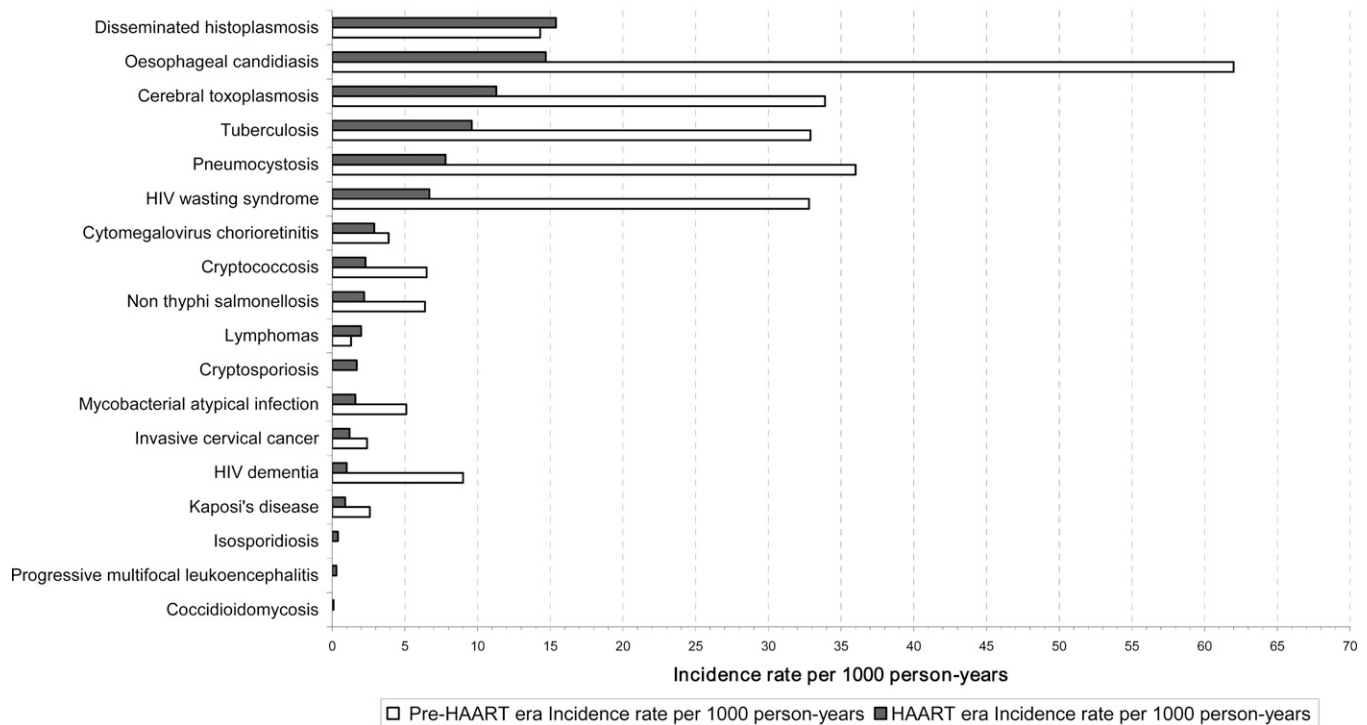


FIGURE 1. Main opportunistic infections before and after the availability of HAART in French Guiana.

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